

Bicycle and Pedestrian Element

Policy: Mainstreaming Nonmotorized Transportation

Improving conditions and safety for bicycling and walking embodies the spirit and intent of ISTEA and TEA-21 (Federal Legislation for surface Transportation) to create an integrated, intermodal transportation system that provides travelers with a real choice of transportation modes. State and local agencies are challenged to work together cooperatively with transportation providers, user groups, and the public to develop plans, programs, and projects which reflect this vision.

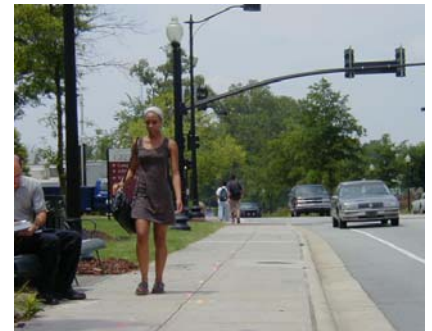
Bicyclists and pedestrians need to have safe, convenient access to the transportation system. Every transportation improvement is an opportunity to enhance the two modes. Bicyclists and pedestrians are included as a matter of routine in the planning, design, and operation of transportation facilities. The decision to not accommodate them is the exception rather than the rule. There must be exceptional circumstances for denying bicycle and pedestrian access either by prohibition or by highway designs that are incompatible with safe, convenient walking and bicycling. Exceptional circumstances include controlled access highways and projects where the cost of accommodating bicyclists and pedestrians is high in relation to the overall project costs and likely level of use by nonmotorized travelers.

Bicyclists and pedestrians have the same origins and destinations as other transportation system users and it is important for them to have safe and convenient access to airports, transit, and other intermodal facilities as well as to jobs, schools, services, recreation facilities, and neighborhoods. This Plan places a strong emphasis on creating a seamless transportation system that all users can enjoy and use efficiently and safely.

Incidental Projects

There are many simple and cost-effective ways to integrate nonmotorized users into the design and operation of our transportation system by including bicycle and pedestrian accommodation as an incidental part of larger ongoing projects. Examples include:

- paved shoulders on new and reconstructed roads
- restriping roads (either as a stand-alone project or after a resurfacing or reconstruction project) to create a wider outside lane or striped bike lanes



Spring Garden Street with new streetscape that includes bike lanes and wider sidewalk

- building sidewalks and trails, and marking crosswalks or on-street bike lanes as a part of new highways, and requiring new transit vehicles to have bicycle racks and/or hooks already installed.

There are usually a number of good reasons for doing these things without specific reference to bicycle and pedestrian access -- shoulders are good for motorist safety as well as providing bicyclists a place to ride -- and the broad eligibility of bicycle and pedestrian facilities in all the major TEA-21 funding programs means that incidental improvements such as these are appropriate to be included as part of larger transportation projects.

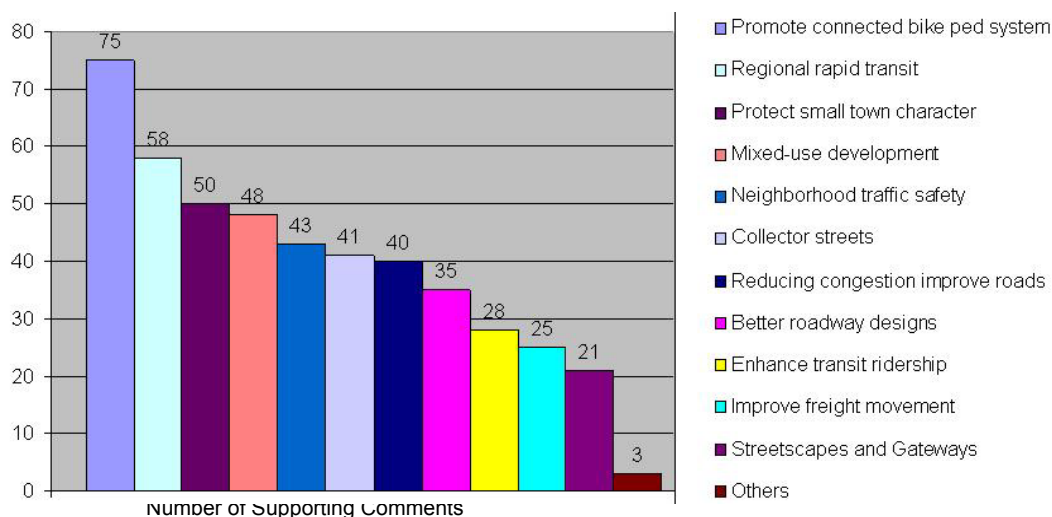
Public Participation

Bicycle and pedestrian planning is a high priority for the community and is evidenced by the recommendations stated in the Greensboro Comprehensive Plan and Guilford County Area plans.

Public involvement workshop participants voiced a high level of support for additional pedestrian and bicycle amenities.

Figure 6.1 depicts the results from an exercise intended to raise awareness for priority topics of the plan. Participants identified bicycle and pedestrian accommodations as one of the highest priorities for the urban area during the first of three workshops. Likewise, results from a statistically valid phone survey concluded that 76% of Greensboro City residents and 66% of Guilford County residents thought that providing pedestrian accommodations was important.

Figure 6.1 — Public Involvement: Priority LRTP Topics



Greensboro Walkability Policy

In March 2002, the Greensboro City Council passed a resolution expressing their commitment to making Greensboro a walkable community by expanding sidewalk facilities and improving pedestrian safety. The resolution is referred to as the Greensboro Walkability Policy and clearly establishes the goal of creating a more walkable Greensboro through the following actions:

- An ongoing City sidewalk construction program targeted to community and transportation system needs, including improving safety and access to needed services and destinations
- An ongoing City effort to respond to pedestrian safety, mobility, and access issues through the use of other warranted pedestrian facility improvements, education, and other strategies
- Ordinance requirements for development and redevelopment that require sidewalk construction to meet pedestrian safety and access needs and further the City's sidewalk connectivity goals

Existing Conditions and Future Projects

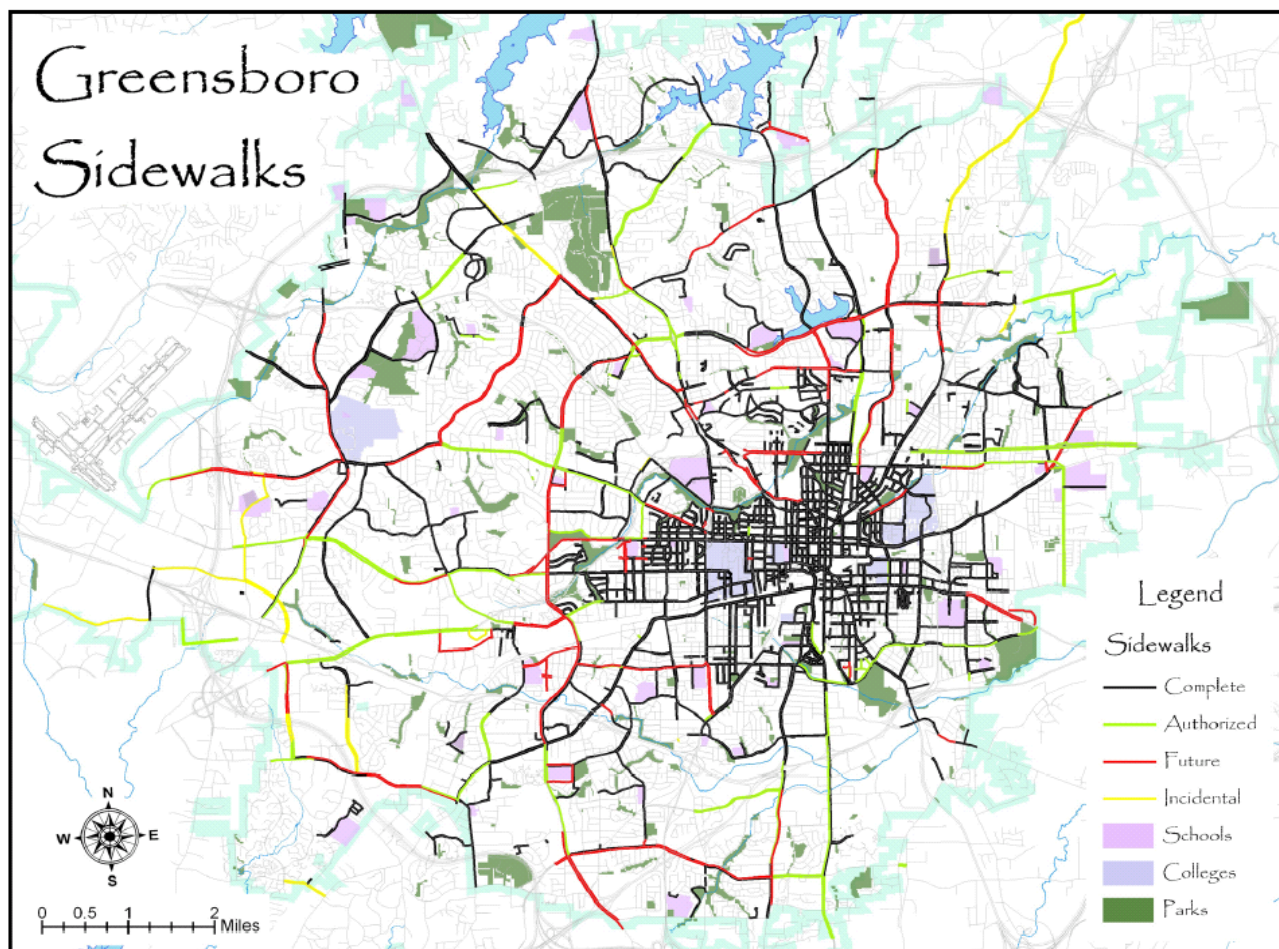
Greensboro has more than 450 miles of public sidewalks.

Map 6.1 depicts the City's sidewalk network and current sidewalk projects. Like many growing communities, the majority of existing sidewalks are located downtown and in the older neighborhoods. Development in the last half of the twentieth century rarely included adequate pedestrian facilities.

The City of Greensboro has initiated an aggressive sidewalk construction program in an effort to infill high priority locations. At an investment rate of \$2 million per year, the City's current sidewalk projects will add 12.7 miles of new sidewalks by July 2005. The City currently has 35 miles of independent sidewalk projects at various stages of design, right-of-way, and construction. An additional 31 miles of roadway projects with sidewalks are currently in various stages of design, right-of-way, and construction. **Map 6.1** shows all existing and currently authorized sidewalk projects in Greensboro and identifies additional mid-term sidewalk construction priorities identified through the Greensboro Sidewalk Prioritization model. This model features a GIS-based software program that supports the development of future priorities targeted to high need locations.



Greensboro has undertaken an aggressive sidewalk construction program



Map 6.1 — Existing and Planned Sidewalks

Pedestrian Safety

In October 2002, the City of Greensboro initiated a pedestrian safety study. Given the concern over the number and frequency of pedestrian crashes in the City of Greensboro, it was determined that an analysis of pedestrian crashes would be an important step toward improving pedestrian safety and the walkability of the community.

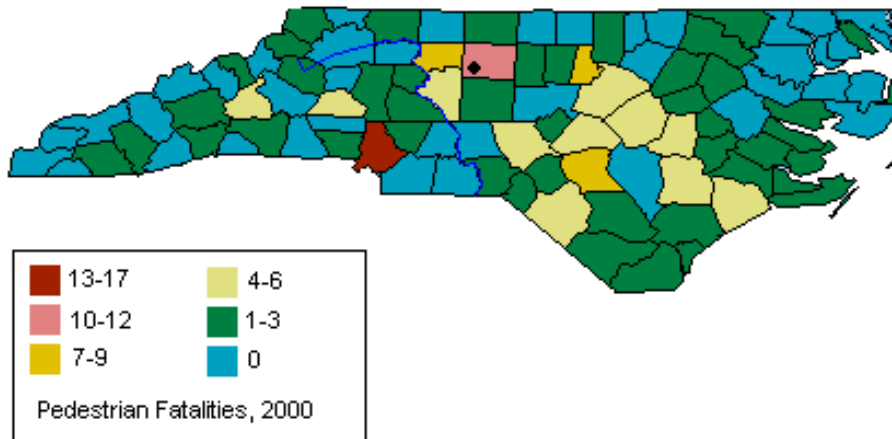
The study documented an analysis of pedestrian safety within the City of Greensboro. The analysis was based on vehicular crashes reports involving pedestrians. In an effort to better understand the variables associated with pedestrian crashes, a database that inventories information such as location, conditions, driver, and pedestrian characteristics as well as other related elements was created. The report notes that between 1997 and 2001, more than 550 reported crashes involving pedestrians occurred within the

“...between 1997 and 2001, there were over 550 reported accidents involving pedestrians within the City Limits of Greensboro.”

-Source: 2002 Greensboro Pedestrian Safety Study



City limits of Greensboro; 23 of these crashes resulted in a pedestrian fatality. At 2.35 pedestrian fatalities per 100,000 people, Guilford County (the third largest county by population) has the second highest fatality rate in North Carolina. **Figure 6.2** depicts the 2000 NC pedestrian fatality rates by county.



**Figure 6.2 — 2000 NC
Pedestrian Accident Rates**

A summary of the findings for the City of Greensboro contained within this report is as follows:

- There were 556 crashes involving pedestrians, 23 resulted in fatalities
- The pedestrian was partially at fault 9.7% of the time
- The motorist was partially at fault 13.3% of the time
- 15.6% of pedestrians in crashes were impaired from drugs, alcohol, or medicine
- 4.5% of motorists were known to be impaired by medicine, alcohol, or drugs
- 18.3% of the crashes resulted in fatal or incapacitating injury
- 57.4% of crashes were in the daylight
- 74.8% of crashes were on a 2-lane, undivided, two-way road
- Traffic control (e.g., traffic signal or STOP sign) was present at 25.2% of crashes
- Only 1.59% of juvenile crashes involved play vehicles (e.g., scooters, skateboards, etc.)

The analysis contained in the study also concluded that the majority of crashes involving pedestrians occurred on thoroughfares. This is in large part due to increased speeds, numerous driveway cuts, and a lack of pedestrian facilities.

Generally, the analysis concluded the location where crashes were most likely to occur and under what conditions. **Table 6.1** inventories those streets with the greatest frequency of pedestrian

crashes. The breakdown of pedestrian crashes by facility type is as follows:

- Thoroughfares: 61%
- Collector Streets: 17%
- Local Streets: 14%

The report concludes with a set of action items including the strengthening of existing ordinances, public awareness campaign, and expansion of the existing sidewalk network.

Greensboro Sidewalk Ordinance

In January 2003 an updated sidewalk ordinance went into effect for the City of Greensboro. The new ordinance essentially requires the construction of sidewalks:

- Along both sides of all major and minor thoroughfares, unless exempt
- Along one side of all collector and sub-collector public streets, unless both sides are warranted by proximity to a pedestrian destination or a pedestrian safety hazard, or unless exempt
- Along one side of all local public streets, unless exempt

The Town of Summerfield also has adopted a pedestrian overlay district for their downtown and continues to require the installation of pedestrian facilities during the development review process.

Safety Program

As a part of their annual safety program, the Greensboro Department of Transportation (GDOT) has begun a review of these past accidents involving pedestrians. Review of historic crash data will identify streets and locations that have numerous pedestrian accidents. Once these locations are identified, a field investigation will be conducted and possible improvements will be implemented. These improvements may include enhanced crosswalk markings and signs, refuge islands, 'In-Street Pedestrian Crossing' signs and/or rumble strips and traffic calming measures. These improvements will help to increase driver's awareness of pedestrian crossings.

Table 6.1 — Most Common Roads for Pedestrian Crashes

Name	Frequency
Market St.	13
Eugene St.	10
Lee St.	10
Florida St.	9
Wendover Ave.	9
Friendly Ave.	8
Walker Ave.	7
Whittington St.	7
Bessemer Ave.	6
Elm - Eugene St.	6
Elm St.	6
High Point Rd.	6
Randleman Rd.	6
Spring Garden St.	6
Battleground Ave.	5
English St.	5
Gillespie St.	5
Holden Rd.	5
Washington St.	5
Willow Rd.	5
16th St.	4
Circle Dr.	4
Cone Blvd.	4
Luray Dr.	4
MLK Jr. Blvd.	4
Sullivan St.	4
Vanstory St.	4

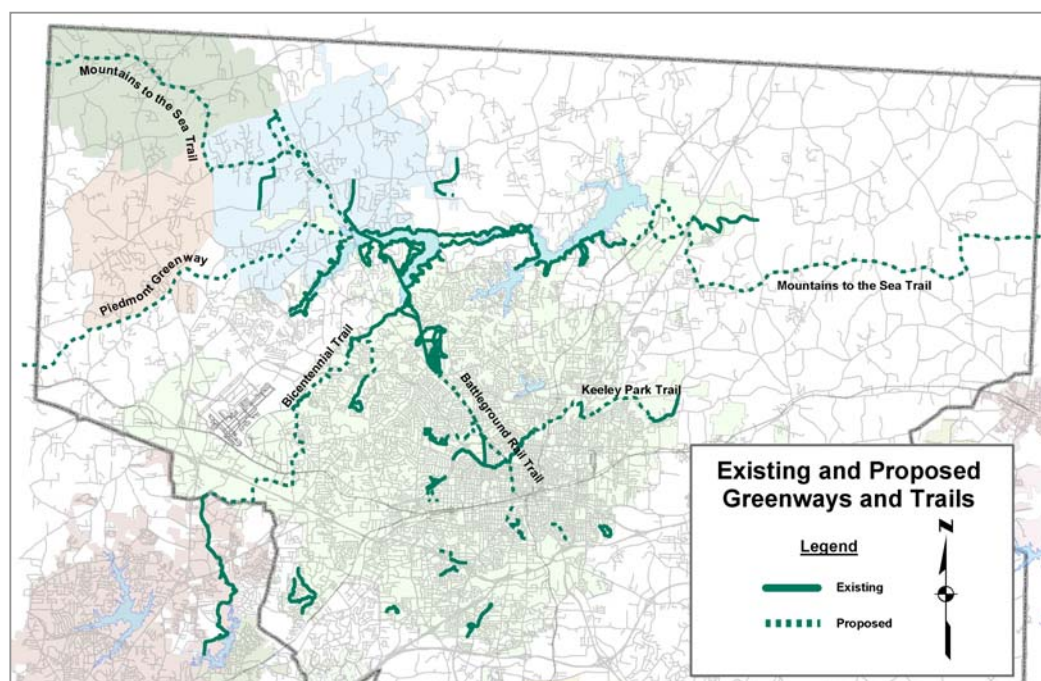


Bicycling and Greenway Trails

Round 1 workshop participants indicated the provision of cycling accommodations as one of the highest priorities. We heard from a diverse set of cycling interests, including transportation cyclists, recreational bike club riders, to occasional cyclists who ride mainly on local streets and trails. Many participants cited the lack of bike lanes or wide outside shoulders as one of the reasons they do not ride bikes more frequently. Concerns about safety were regularly mentioned as another reason more people do not choose to bike for recreation or as a transportation alternative. The only marked bike lanes within the planning area are located on a short section of Spring Garden Street through the University of North Carolina at Greensboro campus. The area currently lacks a systematic plan for the provision of on-street cycling accommodations, and the development of one is a key plan recommendation.

The area has a bicycle route system (based on loops) within the City that traverses mainly local and collector streets and connects to various trails and parks. This system will be updated and connected to routes outside of the City as a part of future bicycle planning work. There are also a number of shared-use paths in the area. The Bicentennial Greenway was begun in 1989 to commemorate the bicentennial of the U.S. Constitution. This 16-mile-long trail will create a nonmotorized connection between High Point City Lake and the Guilford Courthouse National Military Park when completed 2006. **Map 6.2** represents the current and planned greenways within Guilford County.

Bicentennial Greenway is projected to be complete in 2006



**Map 6.2 —
Existing and
Proposed Greenway
Trails**

Battleground Rail-Trail

The Battleground Rail-Trail will be a shared-use path approximately 2.62 miles long from the northwest side of Greensboro to the downtown. It will provide an appealing alternative means of transportation for many residents to avoid an area of significant development and traffic congestion. It will also connect to a growing regional trail system in the Triad. Phase I of the trail will roughly follow an abandoned railroad right-of-way between Pisgah Church Road and Markland Drive. An underpass will be constructed at Cone Blvd. to enhance the safety of trail users. Phase II of the project will continue south into the downtown area along the rail bed.

Bicycle and Pedestrian Element of LRTP

The recommended investments for the bicycle and pedestrian element are based on two factors:

- The current construction programs of the City of Greensboro, Guilford County, and the NCDOT
- Estimates of future funding levels

A key finding of the transportation plan update has been that widespread and deep support exists for improvements to the pedestrian and bicycle facility infrastructure throughout the MPO area. It is anticipated that more extensive improvements will be needed by 2030, but additional, more detailed work will be needed to develop a long-term plan of action. At present, the plan assumes that by 2030, roughly 107 miles of new trails and 400 miles of sidewalks are assumed to be opened as a result of the investments noted in the plan. Complete financial analysis can be found in chapter 12.

Table 6.2 — Projected Expenditures (millions)

Trails	Sidewalks	Total
\$55.7	\$58.8	\$114.5

Bicycle and Pedestrian Investments in the 2030 Transportation Plan

The transportation plan assumes the continuation of an aggressive program by the City of Greensboro to retrofit existing roadways with sidewalks. Targeted streets include thoroughfares, bus routes, high volume/speed and accident locations. Other considerations include proximity to apartments, schools, hospitals, offices, shopping, restaurants, parks, government buildings and other public spaces. The plan assumes continuation of the City's sidewalk petition program on residential streets and neighborhoods. The transportation plan also assumes sidewalks are included in all City of Greensboro roadway projects, as well as

in NCDOT roadway improvement projects in urban and most urbanizing areas.

Finally, the transportation plan also assumes continued implementation of the City and County Trail System. These include the extension of the Battleground Rail-Trail into downtown Greensboro, and completion of the Piedmont Greenway from Winston-Salem to Greensboro through northwest Guilford County.

Bicycle accommodations (bike lanes or wide outside shoulders) are currently planned for some of the LRTP roadway projects. These costs are factored into roadway project costs and are not reflected in **Table 6.2**, which presents projected stand-alone sidewalk and trail expenditures. More detailed work will be needed, however, to develop a long-term strategy for meeting area on-street bicycle facility needs. The MPO plans to conduct a Bicycle Accommodations Study and Plan in 2004-2005 to develop a long term implementation plan.

Summary Recommendations

The following recommendations are a set of action items that reinforce the MPO's commitment to walkability and safe bicycling:

- Implement recommendations of Greensboro Pedestrian Safety Study
- Continued expansion and infill of the sidewalk network, focusing on high priority links, ADA compliance ramps, as well as removal of obstructions
- Include sidewalks (*and bike lanes where appropriate*) in all new roadway projects
- Improve pedestrian crossing conditions through expanded pedestrian signals and high-visibility crosswalks at high volume locations
- Cooperate with local partners (Greensboro, Guilford County, High Point, Winston-Salem and surrounding towns) on the development of a Greenway Master Plan that expands the use of shared-use paths throughout the Triad
- Perform a detailed Bicycle Accommodation Study evaluating the use of on-street and off-street bicycle accommodations within the urban area that prioritizes future cycling infrastructure needs
- Develop an updated bicycle route map for the urban area

Basic sidewalk anatomy

